

PCT

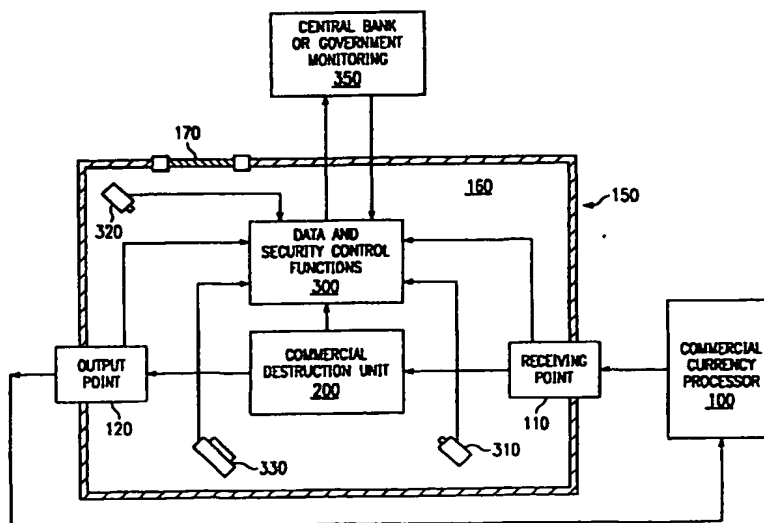
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US98/15502 (22) International Filing Date: 28 July 1998 (28.07.98) (30) Priority Data: 08/977,956 25 November 1997 (25.11.97) US (71) Applicant (for all designated States except US): CURRENCY SYSTEMS INTERNATIONAL [US/US]; 6401 Commerce Drive, Irving, TX 75063 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): HAYCOCK, Richard, G. [CA/GB]; "Ridgemeade", 13 Fairbourne, Corblham KT11 2BT (GB). (74) Agent: CAHOON, Colin, P.; Carstens Yee & Cahoon, LLP, P.O. Box 802334, Dallas, TX 75380 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  Published With international search report. With amended claims.

(54) Title: COMMERCIAL CURRENCY DESTRUCTION



(57) Abstract

The invention accomplishes the commercial destruction of currency notes by routing unfit notes (40) segregated from currency inputted into a commercial currency processor (100) to a secure area for further processing. Once inside the secure area, the notes are processed by proprietary detectors to confirm authenticity and then destroyed. All functions within the secure area (160) are monitored in real-time. The invention thus increases the security of currency destruction and reduces the labor steps involved by eliminating the need for transporting unfit notes between a commercial facility and a government or central bank facility for destruction.

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**COMMERCIAL CURRENCY DESTRUCTION****TECHNICAL FIELD OF THE INVENTION**

The field of this invention relates to the commercial destruction of currency notes by non-government facilities in conjunction with the commercial processing of currency notes.

**BACKGROUND OF THE INVENTION**

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The destruction of national currency notes is presently conducted exclusively by central banks or other government functions. However, the initial determination that a note is unfit, and therefore must be destroyed, often takes place in the commercial sector. Consequently, unfit notes must be sorted and collected by the commercial sector and then shipped to a central bank or other government function for destruction. This government function then again sorts the notes and confirms the selection of notes for destruction.

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By way of example, a commercial bank may process currency notes with a present art high-volume currency processing machine. This high-volume currency processing machine detects various fitness characteristics of notes, for example tears, discoloration and soiling, to determine if a particular note is fit for circulation. The notes are sorted into various stacks at the output of the processing machine. Unfit notes are thus sorted, counted, and bundled for shipment. These unfit notes are then transported, typically by armored car, to a central bank or other government function. The central bank again processes the currency through a high-volume currency processing machine to confirm the commercial sector identification of unfit notes and to again sort notes into various stacks, including an unfit stack, based on standard detected features. The unfit notes are destroyed at the end of this processing function at the central bank.

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Under the above-described method, notes are processed at two separate facilities before they are destroyed and must be transported between the separate facilities in between the two processing

steps. The present invention combines the two processing steps and eliminates the need for transporting the currency from the commercial facility to the government facility. This is accomplished by allowing for the destruction of currency notes after being processed at the commercial facility. This invention incorporates several security features which insure the full and

5 accurate accounting of the destruction of unfit notes just as would occur at the central bank or government facility. The present invention reduces labor steps in destroying unfit notes and increases security by eliminating the need for processing at two separate facilities and the transportation of notes between a commercial facility and a central bank or government facility.

### SUMMARY OF INVENTION

This invention relates to commercial currency note destruction involving the destruction of currency notes immediately after processing by a high-volume processing machine at a commercial facility, as opposed to the destruction occurring after processing at a later date by a central bank or government facility. The invention incorporates security and monitoring methods to insure fully  
5 secure and accurate destruction of unfit notes at the commercial facility. The invention eliminates duplicate currency processing efforts and a need for transporting unfit notes from a commercial facility to a central bank or government facility.

Critical goals of the invention include the incorporation of sufficient security and monitoring  
10 functions to insure that the destruction of notes at a commercial facility is as reliable, accurate, and resistant to theft or fraud as the destruction of unfit notes at a central bank or government facility. Another goal of the invention involves reducing the labor steps involved in the destruction process and is accomplished by eliminating the transportation step between the commercial and government function and the second processing step at the government function. By reducing these steps,  
15 opportunities for security breaches or theft are eliminated. Consequently, the invention actually leads to enhanced security over the present methods of currency destruction.

By way of explanation, currency notes are presently processed in the commercial sector by high-volume currency processing machines. The volume of currency notes involved makes the processing of notes by the government sector at this stage impractical. A stack of notes is loaded  
20 in the feeder on the currency processing machine, and the notes are then run past various standard detectors on a conveyor belt. These detectors measure and quantify certain note features, for example soiling levels, tears or missing portions of the notes, and coloration. The currency processing machine also can detect specific identifying features to each note, for example a note's serial number. Notes are typically sorted by denomination and also sorted into stacks of fit notes,

unfit notes, and suspect notes, which may include counterfeit notes or notes that were not otherwise recognized by the currency processing machine. The unfit notes are then bundled and transported, typically by armored car, to a central bank or like government facility. The commercial activity is eventually credited with turning in the unfit notes for destruction.

5           At the central bank or government facility, the notes are once again run through a similar high-volume currency processing machine. The currency processing machine will again detect various standard physical features and usually has several proprietary detectors developed by the central bank to detect specific clandestine features of the notes. The central bank currency processing machine again sorts notes into fit notes, unfit notes, and suspect or counterfeits. The  
10       serial numbers for the unfit notes are recorded and the unfit notes are then destroyed, thereby taken out of circulation.

          The present invention combines the two processing steps detailed above and eliminates the need for transportation of the unfit notes between the commercial facility and the government facility. This is accomplished by combining a commercial facility, high-volume currency processing  
15       machine with a currency destruction function (often referred to herein as a "commercial destruction unit") with adequate accounting and security measures and monitoring.

          Pursuant to the present invention, the currency is processed through the commercial currency processing machine as previously described occurs in the prior art. Unfit notes are passed into a physically secure area of the commercial processing facility. This area can be made physically  
20       secure by containing the below described functions completely within a unit or separate room or other enclosed area to which personnel from the commercial bank do not have access. The unfit notes are then passed through special proprietary detectors installed by the central bank or government monitoring personnel. These detectors confirm the authenticity of the unfit notes. The specific serial number and/or images of each unfit note could optionally also be recorded. The note

is then destroyed, just as it would have been at the central bank, or rejected as a suspect counterfeit into a holding unit.

The entire process can be monitored in real time by off-site monitoring personnel at the central bank. This is accomplished by a real-time data link between the secure portion of the commercial facility processing function and the central bank. Real-time video monitoring and motion detectors might also be placed in the secured area to insure the sterile environment of the destruction function at the commercial facility. By allowing for the real-time monitoring of both data and video information, and by insuring the security of a separate currency destruction function at the commercial facility, the present invention eliminates the need for duplicate off-site processing and the transportation of unfit notes from the commercial facility to the government facility while also enhancing the overall security of the entire process.

This present invention is a substantial improvement over the prior art in providing the reduced labor steps and increased security described above.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Further objects and advantages of the present invention will become apparent from the following detailed description when read in conjunction with the accompanying drawings, in which:

Figure 1 is a flow chart of the note processing stages related to the invention.

5      Figure 2 is a diagram depicting the modules of the commercial destruction unit.

Figure 3 is a flow chart demonstrating the data flow relating to the processing steps and security measures.



### DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Figure 1 is a flow chart of the note processing stages related to the invention. Currency notes 10 are currently processed in commercial facilities by high speed, commercial currency processing machines 100. A commercial currency processor 100 is inputted with currency notes 10. These  
5 currency notes then travel on a conveyor past a series of detectors which detect various note characteristics, such as coloration, soiling levels, and physical continuity of the note. The serial number of each individual note can also be detected and recorded. The currency processor 100 then sorts the currency notes 10 into various stacks. For example, the currency processor 100 can sort the currency notes 10 into various stacks of fit notes 20 of uniform denomination as well as suspect  
10 or counterfeit notes 30. The currency processor 100 additionally sorts out unfit notes 40. Unfit notes 40 are authentic notes which have detected fitness characteristics below a standardized fitness level. For example, the currency processor 100 can be programmed to identify a note as unfit if the soiling level exceeds a certain detected level, if the coloration of the note has faded to a certain detected level, or if the note lacks a certain percentage of its surface area through rips, tears, or missing  
15 portions of the note.

Under the prior art methods for destroying currency, the unfit notes 40 would next be shipped to a central bank or other government facility for further processing and, ultimately, destruction. Under the present invention, the unfit notes 40 are instead immediately routed to a receiving point 110. This transfer can occur in a continuance process directly from the output of the commercial  
20 currency processor, thereby requiring no manual intervention or transfer. The receiving point 110 not only acts as the next depository of the unfit notes 40, but also receives any data collected on the unfit notes 40 by the currency processor 100. For example, the number of notes transmitted, the specific denomination of each note, and each note's serial note might be transmitted to the receiving point 110 concurrent with the physical transmission of the unfit notes 40 to the receiving point 110.

Figure 1 also illustrates a secure and monitored area 160 enclosed by a physical barrier 150.

This secure area 160 could be contained within a separate room adjacent to the receiving point 110 or could involve a means to enclose the commercial destruction unit 200 in a protective casing such that it appears as an add on to the commercial currency processor 100 and can be located in the same room within the facility.

5        Within the secure and monitored area 160 is a commercial destruction unit 200. The output components of the commercial destruction unit 200 are also shown on Figure 1 as the granulator or shredder 50, audit or unfit notes 60, suspect or counterfeit notes 70, and the overflow/emergency bin 80. Unfit notes 40 transferred from the receiving point 110 to the commercial destruction unit 200 are processed in the commercial destruction unit by again running the notes on a conveyor past several detectors used to detect characteristics of the notes. Unlike the commercial currency processor 100, the commercial destruction unit 200 might also contain detectors proprietary to the central bank or government function specifically designed to detect clandestine note features as a further check on the authenticity of each note. The commercial destruction unit 200 further sorts the unfit notes 40 to sort out any suspect or counterfeit notes not detected by the commercial currency processor 100. The suspect or counterfeit notes are then routed to the suspect or counterfeit note bin 70. Any notes that are detected as having fitness characteristics greater than destruction standards are routed to a fit note bin 60. This bin, in the preferred embodiment illustrated, also could be designated as an audit bin, meaning certain test notes could be sent to this bin as a quality assurance check on the processing function of the commercial destruction unit 200. Any malfunction detected during the processing by the commercial destruction unit 200 would result in routing notes to an overflow/emergency bin 80.

20        The unfit notes 40 that the commercial currency destruction unit 200 confirms are below acceptable fitness parameters, and thus warranting destruction, are then routed to the granulator or

shredder 50 for destruction. All of the output bins 50, 60, 70, 80 route their respective notes or material back outside of the secure and monitored area 160 and through the physical barrier 150 to an output point 120.

Figure 2 is a diagram depicting the individual modules of one preferred embodiment of the commercial destruction unit in further detail. Figure 2 shows the commercial currency processor 100 separated from the commercial destruction unit 200 by the physical barrier 150. The commercial currency processor 100 would pass to the first module 210 of the commercial destruction unit 200 the unfit notes segregated from the processed currency notes by the commercial currency processor 100. The first module 210 accepts a counting handoff from the commercial currency processor 100 and, in the preferred embodiment illustrated, detects for mechanical fitness and uses two separate means for detection of doubles, for example a capacitance thickness measurement in combination with an infrared transmissive measurement. The first module 210 also performs an initial authentication check of the notes. The second module 220 performs an authentication detection functions, both an optional second standard level and a third proprietary level authentication. The third proprietary level authentication check would utilize proprietary detectors to detect clandestine note features. The third module 230 could also perform an optical fitness check checking for soiling level, graffiti, and other optical characteristics. The fourth module 240 performs an optional image lift and/or optical character recognition (OCR) lift and read with either a batch collection of serial numbers or an online extraction of the data. The fifth module 250 contains the output bins for all but the notes not routed to the granulator or shredder 50. In the preferred embodiment illustrated, these output bins are shown as a suspect or counterfeit notes bin 70, an audit or fit notes bin 60, and an overflow/emergency rejects bin 80. The sixth module 260 of the preferred embodiment incorporates the granulator or shredder unit 50 to which the unfit notes designated for destruction are routed. Each of the output bins 60, 70, 80 and the granulator or

shredder unit 50 contain independent counters 251, 252, 253, and 261 for recording the number of notes deposited into each bin or the granulator or shredder unit 50. Figure 2 also shows a vacuum or extraction port 262 through which the granulated or shredded unfit notes are extracted from the commercial destruction unit 200.

5        Figure 3 is a chart demonstrating the data flow relating to the processing steps and various security measures. As noted previously, information collected on the unfit numbers by the commercial currency processor 100, such as the number of notes, denomination, the individual serial numbers and fitness characteristics, are transmitted to the receiving point 110. In the embodiment shown in Figure 3, the receiving point then passes all of this data into the secure and monitored area  
10    160 to both the commercial destruction unit 200 for a counting handoff and to data and security control functions 300. The commercial destruction unit 200 then processes the unfit notes and passes on all the data collected during this processing, including the serial number of each individual note processed and its routing within the unit, to both the data and security control function 300 and to the output point 120. The output point 120 then transmits the information received from the  
15    commercial destruction unit 200 to both the data and security control function 300 within the secure and monitored area 160 and to a comparison loop outside the secure and monitored area 160 back to the commercial currency processor 100. Figure 3 thereby displays two complete data loops for confirming the processing of the unfit notes, a secure loop and an unsecure loop. The unsecure data loop between the output point 120 and the commercial processor 100 would confirm that the number  
20    of unfit notes by denomination and serial number have been inputted into the secured and monitored area 160 and have either been destroyed or sent back outside of the secure and monitored area 160. Within the secure and monitored area 160, the data loop confirms that the number, denomination, and serial numbered notes inputted into the receiving point 110 are likewise processed by the commercial destruction unit 200, and that the physical results of such processing is routed to the

output point 120. All of the data confirming the processing of the notes within the secure and monitored area 160 is accumulated at the data and security control functions 300 and then transmitted in real-time to an off-site central bank or government monitoring function 350. This monitoring function might also be performed on-site by government inspectors assigned to the commercial facility.

Figure 3 shows additional security measures to maintain the security and integrity of the secure and monitored area. In a embodiment utilizing a separate room with the enclosure 150 representing physical walls, access into the secure and monitored area 160 would only be permitted through a single entry 170 with security locking means which would only permit entry of authorized personnel or representatives of the central bank or government monitoring facility. A motion detector 330 monitors the secure and monitored area 160 for any motion within said area. Any detected motion would be transmitted to the data and security control functions 300. Figure 3 also depicts a preferred embodiment with security video cameras 310, 320 which provide real-time video monitoring data to the data and security control functions 300. The accumulated output from the motion detector 330 and the security cameras 310, 320 is transmitted real-time from the data and security control functions 300 to the central bank or government monitoring facility 350. To confirm the authenticity of the real-time data received by the monitoring facility 350, test messages from the monitoring facility 350 to the data and security control function 300 and real-time control of security functions, such as directional control of the video cameras 310, 320, can be incorporated into the system.

It is also understood that changes in the details, materials, methods, and arrangements of the present invention, which has been described and illustrated in order to explain the nature of the invention, may be made by those skilled in the art within the principal and scope of the invention as expressed in the following claims.

**I CLAIM:**

1. A method for the commercial destruction of currency, comprising the steps of:
  - (a) segregating currency into fit and unfit notes by use of a commercial currency processing machine at a non-government related facility;
  - (b) routing said unfit notes to a receiving point within the facility for secure handling;
  - 5 (c) processing said unfit notes routed to the receiving point in a secure area within the facility to confirm the step (a) segregation of unfit notes; and
  - (d) destroying the unfit notes.
2. The method of claim 1 further comprising the step of:
  - (e) routing the destroyed note material to an output point outside of the secure area.
3. The method of claim 2 wherein data on the type and number of notes segregated, routed, processed, and destroyed is collected at each step of the method.
4. The method of claim 3 wherein said data is compared as between each step.
5. The method of claim 4 further comprising the step of:
  - (f) transmitting in real-time said data to a monitoring function.
6. The method of claim 1 wherein the note processing of step (c) utilizes a government proprietary detection method for the detection of clandestine note features.

7. The method of claim 1 wherein the secure area is physically inaccessible to non-government approved personnel.
8. The method of claim 1 wherein the secure area is visually monitored by video equipment providing real-time images of the area to a monitoring function.
9. The method of claim 1 wherein the secure area is monitored by a motion sensing device.
10. The method of claim 1 wherein real-time data on the processing of step (c) is transmitted to a monitoring function.
11. The method of claim 1 wherein real-time data on the destruction of notes of step (d) is transmitted to a monitoring function.

12. An apparatus for the commercial destruction of currency comprising:  
a physically secure enclosure;  
a currency processor within said enclosure;  
means for real-time monitoring of the currency processor function; and,  
5 means for real-time monitoring of the security of the enclosure.
13. The apparatus of claim 12 wherein said means for real-time monitoring of the security of the enclosure includes a video monitor.
14. The apparatus of claim 12 wherein said means for real-time monitoring of the security of the enclosure includes a motion sensor.
15. The apparatus of claim 12 wherein the currency processor includes detection means for detecting clandestine note features.



**AMENDED CLAIMS**

[received by the International Bureau on 23 February 1999 (23.02.99);  
original claims 5, 8, 10, 11 and 12 amended;  
new claims 16-20 added; remaining claims unchanged (4 pages)]

1. A method for the commercial destruction of currency, comprising the steps of:
  - (a) segregating currency into fit and unfit notes by use of a commercial currency processing machine at a non-government related facility;
  - 5 (b) routing said unfit notes to a receiving point within the facility for secure handling;
  - (c) processing said unfit notes routed to the receiving point in a secure area within the facility to confirm the step (a) segregation of unfit notes; and
  - (d) destroying the unfit notes within the secure area at the non-government facility.
2. The method of claim 1 further comprising the step of:
  - (e) routing the destroyed note material to an output point outside of the secure area.
3. The method of claim 2 wherein data on the type and number of notes segregated, routed, processed, and destroyed is collected at each step of the method.
4. The method of claim 3 wherein said data is compared as between each step.
5. The method of claim 4 further comprising the step of:
  - (f) transmitting in real-time said data to a monitoring function which provides a means for governmental oversight of the destruction of said unfit notes.
6. The method of claim 1 wherein the note processing of step (c) utilizes a government proprietary detection method for the detection of clandestine note features.

7. The method of claim 1 wherein the secure area is physically inaccessible to non-government approved personnel.
8. The method of claim 1 wherein the secure area is visually monitored by video equipment providing real-time images of the area to a government monitoring function.
9. The method of claim 1 wherein the secure area is monitored by a motion sensing device.
10. The method of claim 1 wherein real-time data on the processing of step (c) is transmitted to a monitoring function which provides a means for governmental oversight of the destruction of said unfit notes.
11. The method of claim 1 wherein real-time data on the destruction of notes of step (d) is transmitted to a government monitoring function.

12. An apparatus for the commercial destruction of currency comprising:  
a physically secure enclosure at a non-government facility;  
a currency processor within said enclosure;  
means for real-time monitoring by a government entity of the currency processor  
5 function; and,  
means for real-time monitoring by a government entity of the security of the enclosure.
13. The apparatus of claim 12 wherein said means for real-time monitoring of the security of the enclosure includes a video monitor.
14. The apparatus of claim 12 wherein said means for real-time monitoring of the security of the enclosure includes a motion sensor.
15. The apparatus of claim 12 wherein the currency processor includes detection means for detecting clandestine note features.

16. A method for the destruction of unfit currency notes at a non-government facility comprising the steps of:
- (a) separating fit notes from unfit notes;
  - (b) routing said unfit notes to a secure and monitored area within a non-government facility;
  - (c) confirming the receipt of the unfit notes into the secure and monitored area; and,
  - (d) destroying the unfit notes in the secure and monitored area.
17. The method of claim 16 wherein the secure and monitored area of step (b) comprises a means for governmental oversight of the destruction of the unfit notes.
18. The method of claim 16 wherein the confirming step (c) comprises transmitting accounting information in real-time to a government affiliated monitoring function.
19. The method of claim 16 wherein the routing of said unfit notes in step (b) occurs immediately after separating the fit note from the unfit notes.
20. The method of claim 16 wherein the separating of the fit notes from the unfit notes of step (a) occurs in close physical proximity to the secure area within the non-government facility.

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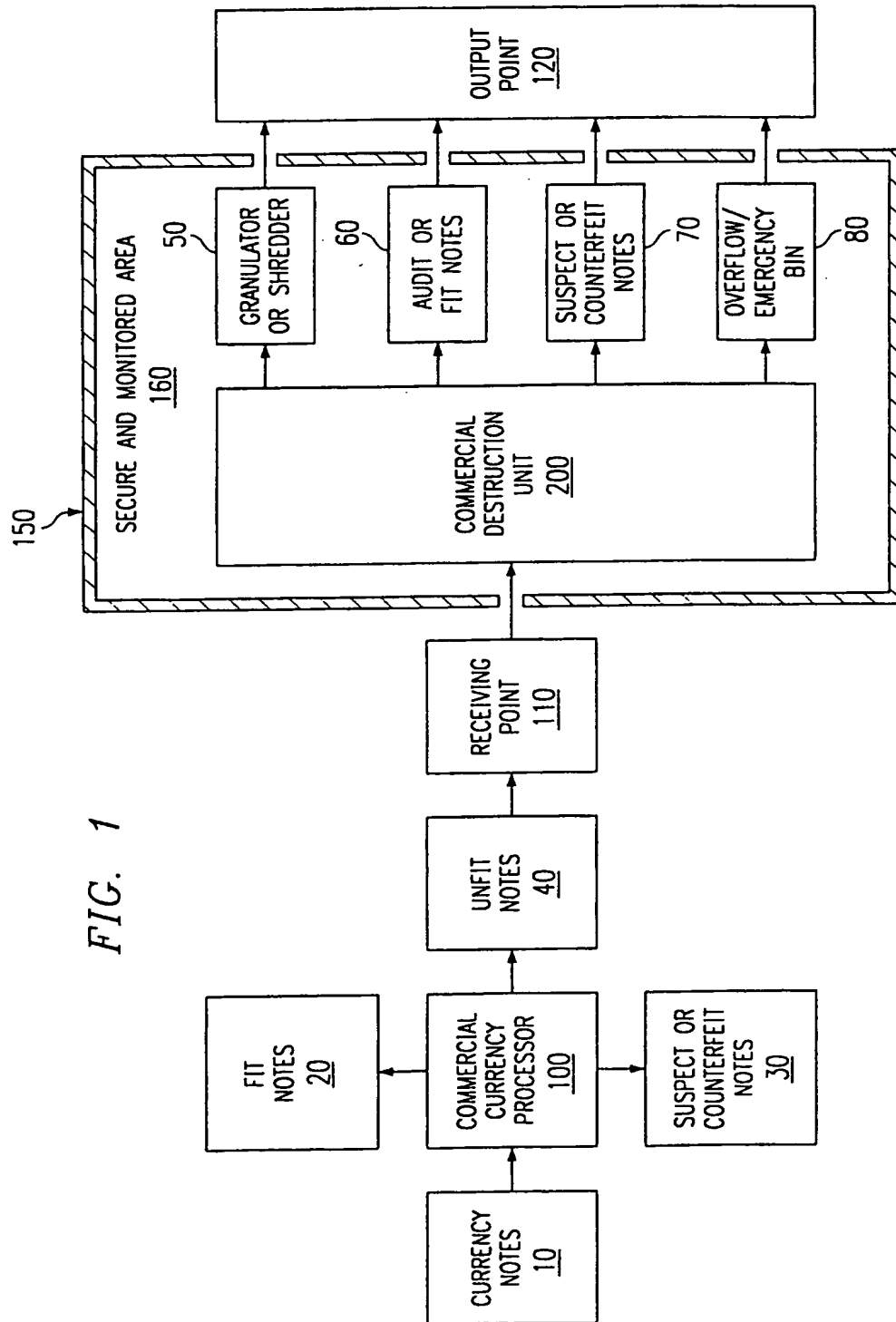


FIG. 1

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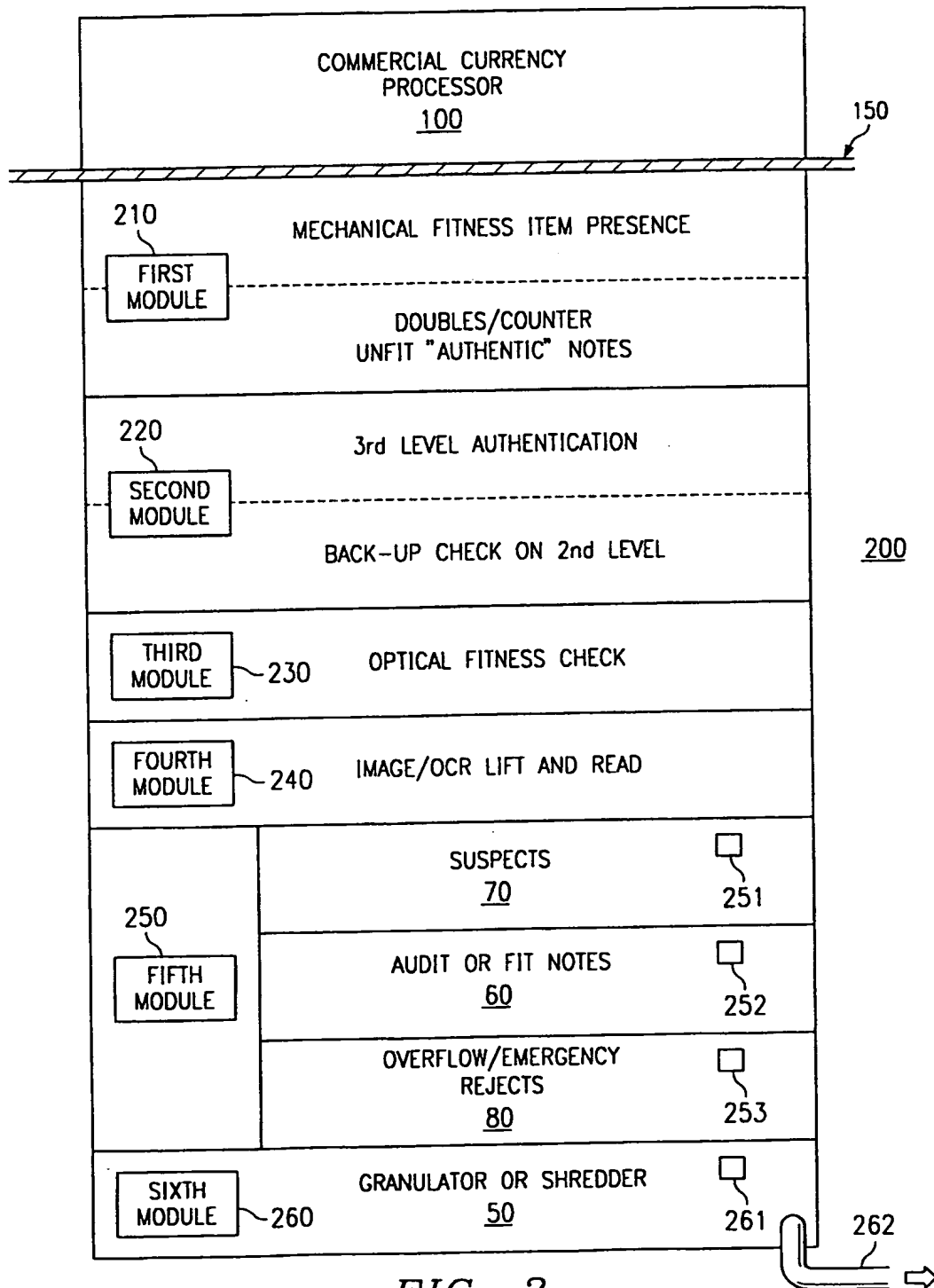
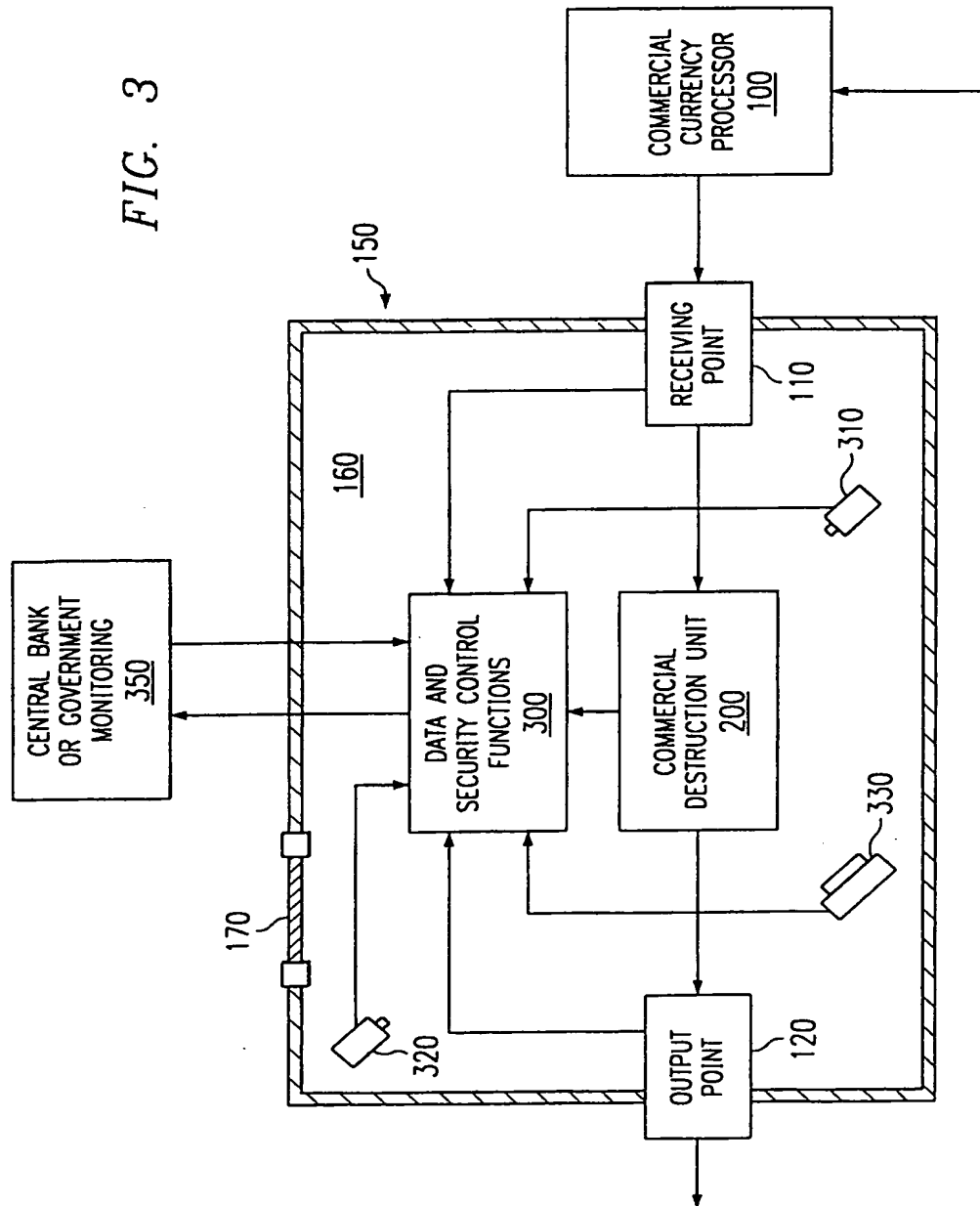


FIG. 2

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FIG. 3



## INTERNATIONAL SEARCH REPORT

 International application No.  
PCT/US98/15502

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G06K 9/00

US CL :Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 382/135, 137; 340/825.32; 348/150, 154, 155; 235/379, 194/203, 194/4 R;

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Please See Extra Sheet.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS and Derwent

search terms: currency, money, bill, note, destruct, destroy, motion, moveent, detect, sensing

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,759,382 A (WALKLEY et al) 18 September 1973 (18.09.73), col. 6, lines 30-45; col. 17, lines 10-25; col. 1, lines 5-30; col. 7, lines 40-61; col. 2, lines 1-45.	1-15
Y	US 5,666,157 A (AVIV) 09 September 1997 (09.09.97), col. 6, lines 13-24; col. 7, lines 36-54; col. 8, lines 1-18.	8-15
A	US 4,991,008 A (NAMA) 05 February 1991 (05.02.91), abstract, lines 1-20.	8-15
A	US 5,039,020 A (LEUTHOLD et al.) 13 August 1991 (13.08.91), col. 4, lines 20-62.	1-8
A	US 4,346,851 A (BERNARDI et al.) 31 August 1982 (31.08.82), col. 1, lines 50-68; col. 2, lines 1-35.	1-8



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

26 OCTOBER 1998

Date of mailing of the international search report

19 NOV 1998

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/15502

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,325,952 A (McGINLEY et al.) 05 July 1994 (05.07.94), col. 2, lines 49-66.	1-6
A	US 5,465,115 A (CONRAD et al.) 07 November 1995 (07.11.95), col. 4, lines 25-60.	8-15
A	US 5,570,465 A (TSAKANIKAS) 29 October 1996 (29.10.96), col. 14, lines 5-40.	1, 12
A	US 4,145,715 A (CLEVER) 20 March 1979 (20.03.79), col. 12, lines 1-11.	8-15
A	US 4,319,132 A (GUIBORD et al.) 09 March 1982 (09.03.82), abstract, lines 1-15.	1, 12

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/15502

## A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

382/135, 137; 340/825.32; 348/150, 154, 155; 235/379, 194/203, 194/4 R;

## B. FIELDS SEARCHED

Documentation other than minimum documentation that are included in the fields searched:

None